

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Chemtura USA Corp- Geismar Plant UBOB Unit
Chemtura USA Corporation
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 1433
Activity Number: PER19960002
Draft Permit 1186-V0**

The regulatory basis for the Statement of Basis is found in 40 Code of Federal Regulations (CFR) § 70.7 Permit issuance, renewals, reopenings, and revisions, subsection (a), paragraph (5) and the Louisiana Administrative Code (LAC), Title 33, Part III. AIR. Specifically §531. Public Notice and Affected State Notice, subsection A, paragraph 4. LAC 33:III.531.A.4 states:

“The permitting authority shall provide a statement that sets forth the legal and factual basis for the proposed permit conditions of any permit issued to a Part 70 source, including references to the applicable statutory or regulatory provisions. The permitting authority shall send this statement to any person who requests it and to EPA.”

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I. *APPLICANT:*

Company:

Chemtura USA Corporation
P.O. Box 397
Geismar, Louisiana 70734

Facility:

Chemtura USA Corp- Geismar Plant, UBOB Unit
36191 Highway 30, Geismar, Ascension Parish, Louisiana
Approximate UTM coordinates are 691.69 kilometers East and 3342.72 kilometers North, Zone 15

Responsible Official:

Mr. W. Keith Baggett, Factory Manager

II. *FACILITY AND CURRENT PERMIT STATUS*

Chemtura USA Corporation operates an integrated chemical production facility approximately 0.9 miles from Geismar, in Ascension Parish. Ascension Parish is currently designated as "marginal" non-attainment for the 8-hour ozone national ambient air quality standard, VOC and NO_x are the regulated air pollutants for ozone. The Geismar facility is a major source subject to the Part 70 operating permit program because it has the potential to emit 100 or more tons per year of VOC and NO_x. In addition, this facility has the potential to emit 10 or more tons per year of a single TAP and 25 or more tons per year of aggregate TAPs.

Chemtura's facility is bordered by BASF Corporation to the south, Rubicon to the west, Borden Chemicals and Plastics to the north and Louisiana Highway 30 to the east. Nearest residences to the site are communities located in Geismar, Louisiana and on LA. Highway 73. In 2001, the company's name was changed from Uniroyal Chemical Co., Inc. to Crompton Manufacturing Company, Inc. In 2006, the company's name was changed to Chemtura USA Corporation. This facility produces synthetic rubber and specialty rubber chemicals used as processing aids, anti-ozonants, and accelerators in the synthetic rubber and plastics processing industry in producing such items as automobile tires, rubber hoses, foam rubber gaskets, roofing shingles, etc.

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The process units that exist on this site include: FLEXZONE®, THIAZOLES®, CELOGEN® OT-MBT, CELOGEN® AZ, Maleic Hydrazide (MH/MBT), para-aminodiphenylamine (UBOB) and BHT/B-NINE. Other units produce EPDM synthetic rubber, ROYALENE® and TRILENE®. Support processes on site include a maintenance/lab area and several wastewater treatment plants.

Timely applications for initial Part 70 Title V permits were submitted by the company, therefore, the facility continues to operate pursuant to the "application shield" provided in the Part 70 Title V Program.

This Part 70 operating permit is for the UBOB Unit which operates under Permit Number 1899(M-1) issued March 20, 1987 and Permit Number 1186C (M-1) issued October 24, 1989. The UBOB Unit commenced operation prior to June 19, 1969.

Initial/Modification Title V Part 70 permits that were issued by the department include:

Permit #	Units or Sources	Date Issued
2099-V1	THIAZOLES® Unit	11/12/2003
2305-V1	Sulfur Recovery Unit	10/16/2003
2531-V0	Royalene WWTP	04/17/1998
2551-V0	Maintenance/Lab	06/30/1998
2327-V2	MH/MBT Unit	10/25/2003
514C-V1	CELOGEN® AZ Unit	08/28/2002
2292-V0	Wastewater Treatment Plant	09/22/1998
2292-V1	Wastewater Treatment Plant	12/30/2004 and amended 05/19/2005
2333-V0	Flexzone Unit	09/22/1998
2333-V1	Flexzone Unit	12/30/2004 and amended 04/20/2005
2242-V0	CELOGEN® OT-MBT Unit	08/18/1998
2572-V2	BHT/B-NINE Unit	01/14/2005
2531-V1	Royalene WWTP	02/25/2005 and amended 07/08/2005
2242-V1	CELOGEN® OT-MBT Unit	08/26/05
2041-V0 (0180-00012-V0)	Royalene and Trilene Units	08/05/2005 and amended 12/22/2005

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Office of Environmental Services

STATEMENT OF BASIS

Chemtura USA Corp- Geismar Plant UBOB Unit
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Permit #	Units or Sources	Date Issued
2572-V3	BHT/B-NINE Unit	11/10/2005

Initial/Renewal/Modification Title V Part 70 permits that are under review by the department include:

Permit #	Units or Sources	Date Issued
2099-V2	THIAZOLES® Unit	Permit Pending
1186C-V0	UBOB Unit	Permit Pending
2551-V1	Maintenance/Lab	Permit Pending
514C-V2	CELOGEN® AZ Unit	Permit Pending

III. PROPOSED PERMIT / PROJECT INFORMATION

Proposed Permit

A permit renewal/modification application and updated Emission Inventory Questionnaire (EIQ), were submitted by Chemtura USA Corporation on October 12, 1996, May 23, 2002, and January 23, 2005. Supplemental Information was received on June 17, September 2, December 16, December 28, 2005, January 16 and March 14, 2006.

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge, Louisiana, on XXX XX, 2006 and The Gonzales Weekly, Louisiana, on XXX XX, 2006 and Published in the Office of Environmental Services Public Notice Mailing List on XXX XX, 2006. The proposed permit was also submitted to U.S. EPA Region VI for review and comment. All comments will be considered prior to the final permit decision.

Project description

Chemtura's UBOB Unit produces an important intermediate chemical used in making anti-ozonants for the rubber industry. First an intermediate is made by reacting diphenylamine in several continuous steps with caustic, hydrochloric acid, sodium nitrite, and sulfuric acid. This intermediate is then reacted with hydrogen in the presence of a catalyst. The final product is distilled for purity. This process has been optimized to reduce the amount of product tar that must be disposed. There are several systems operated for the continuous

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recovery of methanol, catalyst, and toluene. Toluene, which is used to dissolve the reactants for improved processing, is routed to two distillation columns designed to reduce, reuse, and recycle it. Also, a large distillation column is used to recover methanol which is recycled into the process.

This renewal/modification permit allows for the following:

- Inclusion of emission points (EPNs) operating under previous Permit Nos. 1186C (M-1) and 1899
- The shutdown of the UBOB II Unit and corresponding elimination of certain EPNs, including 0075, 0076, 0207, 0208, 0223, 0228, 0229, 0230, 0231, 6508, 6510, 6517, and 6518
- Elimination of several EPNs as a result of process review, including 0126, 0196, 0201, 0205, 0227, 0232, 0233, 0254, 0258, 0265, and 6506
- Replacement of Cooling Tower CT-1 with Cooling Tower EQT541/EPN6525 as provided in the Letter of No Objection dated October 15, 2004
- Proposed physical changes to add organic recovery devices and upgrade the existing NO_x scrubber (EIQ220/EQT502) for better efficiency from the first stage reactors. In addition a two-stage scrubber is being installed for the second stage reactors; the first stage will be used for organic recovery/reduction of HCl emissions and the second stage will recover organics and reduce NO_x emissions as provided by the LDEQ Authorization to Construct/Approval to Operate granted to Crompton dated March 15, 2005
- Reconciliation and updates to emission calculation methodologies and emission rates for currently permitted sources to reflect current operation based upon the most current understanding of process chemistry and the best available information
- Reconciliation and updates to address several existing, but previously unpermitted and/or unidentified sources including EIQ6519/EQT541, EIQ6528/EQT548, EIQ6529/EQT549, EIQ6530/EQT550, EIQ6531/EQT551, EIQ6532/EQT552, EIQ6534/EQT554

Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

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- Incorporation of a specific condition into the UBOB Unit permit to provide guidance regarding the regulatory program UBOB Unit Emissions may be subject to per 40 CFR 63 Subpart FFFF, as promulgated, Specific Requirement No. 227
- Inclusion of EPN6513 as a GCXVII source, and inclusion of EPNs 6507 and 6514 as Insignificant Activities
- Clarification of several sources identified under a different emission point as listed in the table below:

OLD EPN	NEW EPN/EIQ	EQT
0198	0198a	472
0198	0198	484
0226	0199	485
6509	0124	473
6511	0124	473
6524	0220	502

Estimated emissions in tons per year are as follows:

Pollutant	Before	After ¹	Change
PM ₁₀	-	10.03	+10.03
SO ₂	-	-	-
NO _x	51.30	20.95	- 30.35
CO	-	10.32	+10.32
VOC*	61.72	95.04	+33.32

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*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before ¹	After ¹	Change
Aniline	NS	0.09	+0.09
Benzene	NS	0.27	+0.27
Chlorobenzene	NS	0.08	+0.08
Chloromethane	NS	11.48	+11.48
Methanol	6.19	11.49	+5.30
Phenol	NS	0.03	+0.03
Phosgene	NS	<0.01	<0.01
Toluene ²	31.69	63.37	31.68
Total	37.88	86.81	48.93

*Highly Reactive VOC (HRVOC) Speciation (TPY):

Toluene² 63.38

*Other VOC (TPY): 8.25

Non-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before ¹	After ¹	Change
Ammonia	NS	0.67	+0.67
Hydrochloric Acid	NS	1.92	+1.92
Nitric Acid	NS	0.01	+0.01
Sulfuric Acid	NS	1.36	+1.36
Total	NS	3.96	+ 3.96

¹The before emissions represent emissions that were grandfathered or existing, but not previously speciated or accounted for.

²The after emissions represent speciation of pollutants, updated emission factors, and improved calculation methodology.

³Emissions of Toluene are included in VOC TAPs and HRVOCs.

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IV. REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the draft permit.

National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

The requirements of Subpart FFFF applies to any one who owns or operates a miscellaneous organic chemical manufacturing process unit (MCPU), located at, or are part of, a major source of hazardous air pollutants (HAP) emissions as defined in section 112(a) of the Clean Air Act (CAA). The UBOB Unit is an affected MCPU as defined in Subpart FFFF and must be in compliance with Subpart FFFF, as promulgated.

Prevention of Significant Deterioration (PSD)/Non-attainment New Source Review (NNSR) Applicability

The proposed project which includes installing recovery/emission reduction devices and removing equipment from service will not result in an increase in emissions, therefore PSD/NNSR does not apply.

Air Modeling Analysis

Dispersion Model(s) Used: None

Maximum Achievable Control Technology (MACT) requirements

These regulations define maximum achievable control technology (MACT) standards for stationary source categories of hazardous air pollutants (HAPs). These HAPs were listed in the Clean Air Act Amendments of 1990.

The UBOB Unit is subject to the Miscellaneous Organic Chemical Manufacturing NESHAP (Subpart FFFF). This MACT rule was promulgated on November 10, 2003. The compliance date for existing facilities is as promulgated. Source types that are potentially subject include storage vessels, heat exchange systems, loading operations,

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process vents, and fugitive emissions. Sources that are determined to be subject to the requirements of Subpart FFFF must be in compliance as promulgated.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

V. PERMIT SHIELDS

A permit shield was not requested.

VI. PERIODIC MONITORING

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

Compliance Assurance Monitoring (40 CFR 64) is applicable to the facility, however CAM is not part of this initial Part 70 operating permit because the UBOB Unit does not have any major source units that have the potential to emit greater than 100% of the major threshold of a regulated air pollutant, after taking controls (post-control) into account, defined as pollutant specific emission units (PSEUs).

VII. APPLICABILITY AND EXEMPTIONS OF SELECTED SUBJECT ITEMS

The applicability or exemption of selected subject items are provided in Section XI of the draft Part 70 operating permit.

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

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VIII. STREAMLINED REQUIREMENTS

None

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

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IX. GLOSSARY

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) - A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Disulfide (H₂S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

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Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulphur.

Title V permit – See Part 70 Operating Permit.

Volatile Hazardous Air Pollutant (VHAP) – A substance regulated under 40 CFR 61 Regulations for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene and Vinyl Chloride are VHAPs.

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Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.